I agree that lignocaine is not a reliable alternative to a beta blocker in the management of adrenergically induced disturbances (Scott, Davie and Stephen, 1971). Lignocaine is a cell membrane stabilizer with a special affinity for neuromuscular tissue and is effective when given intravenously in relatively enormous doses. Like propanidid it may inactivate the baroreceptor mechanism to cause reflex stimulation of the cardiac sympathetic nervous system (Johnstone and Barron, 1968). This may explain its ineffectiveness in the management of sinus tachycardia. As an anti-dysrhythmic agent it is preferable to a beta blocker in patients with severe myocardial insufficiency, metabolic acidosis and other toxic states in which sympathetic blockade is not desirable. The membrane stabilizing effect of propranolol, alfpranolol and oxprenolol when given intravenously in doses of 2 to 5 mg must be as infinitesimal as that caused by a similar dose of lignocaine.

Strictly speaking the dose of a beta blocker cannot be defined precisely. The beta blocker competes with catecholamines for the occupation of the receptor site. The size of the dose is dictated by the severity of the adrenergic stress, i.e. the amount of circulating catecholamines. Practolol 5 to 20 mg or more i.v. may be required for the adequate control of adrenergic overactivity of the hearts of anaesthetized and atropinized patients, according to the degree of adrenergic stress.

MICHAEL JOHNSTONE

REFERENCES


HAND OR MACHINE? A SECOND LOOK AT VENTILATORS

Sir,—In recent years the specialty has become increasingly aware of the problems involved in cleaning and sterilizing anaesthetic equipment. Several chemical methods of sterilizing have been described, but doubts have been raised as to the efficiency of these processes, and it has been suggested that ventilators may have been associated with incidents of cross infection.

In view of this feeling, it was thought that a study of postoperative lung infections in a number of patients mechanically ventilated, compared with a similar group of patients manually ventilated might produce interesting results.

Three hundred cases of pneumonectomy and lobectomy dealt with at the Liverpool Regional Thoracic Unit in the period 1966–1970 were retrospectively studied; 150 were hand ventilated and the same number mechanically ventilated. The patients were randomly assigned to the two groups; those originally presenting at out-patients on Monday or Tuesday were allocated to the mechanically ventilated group; those presenting on Wednesday to the manually ventilated group. East-Radcliffe ventilators were used in the Unit throughout the period under study, and these were sterilized by the Resiguard foam method described by Meadows and colleagues (1968) at intervals of about 24 hours, so that each ventilator was used for several cases. The Waters circuits used for manual ventilation were re-autoclaved after each case.

The two groups of patients were felt to be comparable as regards their pre-operative condition as witnessed by their similar mean vital capacities and FEV/FVC ratios (table I).

The respiratory infections were graded as follows:

- Grade 0—no pyrexia, excessive sputum, or extra physiotherapy required (up to 99.0°F allowed in the first two days).
- Grade 1—mild pyrexia, up to 101°F, no systemic upset.
- Grade 2—pyrexia of 101.1°F or more, with or without systemic upset, e.g. cardiac failure.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of cases</th>
<th>Manual</th>
<th>Mechanical</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>86</td>
<td>66.6</td>
<td>3.13</td>
</tr>
<tr>
<td>1</td>
<td>74</td>
<td>66.2</td>
<td>3.15</td>
</tr>
<tr>
<td>2</td>
<td>74</td>
<td>66.2</td>
<td>3.15</td>
</tr>
</tbody>
</table>

Grade 3—requiring urgent tracheostomy or bronchoscopy.

The results are shown in table II.

TABLE II

<table>
<thead>
<tr>
<th>Grade</th>
<th>Manual</th>
<th>Mechanical</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>28</td>
<td>31</td>
</tr>
<tr>
<td>1</td>
<td>99</td>
<td>77</td>
</tr>
<tr>
<td>2</td>
<td>19</td>
<td>23</td>
</tr>
</tbody>
</table>

The differences between the two groups for each grade were not significant at the 5 per cent level, and this work provides no firm evidence that mechanical ventilation in this Unit is associated with an increased incidence of postoperative infective lung complications.

R. H. FLETCHER

REFERENCE


AWARENESS DURING OPERATIVE OBSTETRICS UNDER GENERAL ANAESTHESIA

Sir,—I am grateful to Dr Crawford and yourself for allowing me to see his reply to my letter. As regards his final paragraph, my justification for using methoxyflurane or halothane before delivery is that protection is provided against awareness during the induction-delivery interval, after atropine is used at induction and 50/50 nitrous oxide/oxygen mixture for maintenance till delivery. My reason for changing to halothane after delivery is that, in agreement with Dr Crawford, in his original article, I also have found that using methoxyflurane until the end of the operation has caused many patients to be drowsy. I would hope that with the use of halothane the different pharmacokinetics of this agent would allow faster recovery.

JAMES WILSON

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